Course Syllabus

Instructor Information

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Course Description

This Course is designed to familiarize students with all aspects of the hydrologic cycle, but the bulk of the course is devoted to hydrogeology, the study of groundwater. Characteristics of groundwater flow and practical methods of aquifer characterization will be discussed particularly as they relate to the evaluation of groundwater supplies and groundwater contamination and remediation. Prerequisites: None

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Course Objectives

- Describe each component of the hydrologic cycle, and explain how each is measured.
- Describe the methods used to collect data on aquifers and groundwater.
- Determine from applicable data, the characteristics of any given aquifer.
- Predict from the characteristics of an aquifer the direction and distance a pollutant might travel within an aquifer.

Textbook(s)

Required:
Manning, J. C. (1997) Applied Principles of Hydrology, 3rd ed. Upper Saddle River, NJ: Prentice Hall
Optional: (We won't use this one, but if you are going to work much in hydrology, this is a must. But be warned, it's extremely heavy in math:
Fetter, C.W. (2001) Applied Hydrogeology, 4th ed, Upper Saddle River, NJ: Prentice Hall

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Course Requirements

1. Complete all reading assignments including reading the lecture notes
2. Complete the quiz at the end of each unit
3. Complete all homework assignments --- Some of these, such as drawing groundwater maps, must be done by hand and can not be done on the computer. Once completed, you can either scan them in and submit them in the appropriate submission folder, or you can snail-mail them to me.
4. Successfully pass three semester Exams

Course Grades

Course Grades will be on a weighted system as follows:

1. Three Exams = 80% of course grade
2. Homework = 10% of course grade
3. Quizzes = 10% of course grade

Letter Grades will be assigned as follows:

90% -- 100% = A
80% -- 89% = B
70% -- 79% = C
55% -- 69% = D
< 55% = F

Unit Topics

Unit 1: The Hydrologic cycle and properties of water (Chapters 1 & 2)
Unit 2: Evapotranspiration and condensation (Chapters 3 & 6)
Unit 3: Precipitation (Chapters 4)
Unit 4: Runoff and Streams (Chapter 8)
Unit 5: Infiltration (Chapter 5)
Unit 6: Darcy's law (of groundwater flow) and Soil sieve tests **EXAM I**
Unit 7: Physical Groundwater Models (Chapter 7)
Unit 8: Watertable Maps
Unit 9: Well Design
Unit 10: Determining drawdown from estimated aquifer characteristics
Unit 11: Pump tests **EXAM II**
Unit 12: Groundwater velocity and practice problems **FINAL EXAM**

Grievance Procedures

Students taking online classes at Texas A&M University-Commerce have the same rights as students enrolled in face-to-face classes. The A&M-Commerce Student Guidebook (page 55) details those rights and explains complaint and grievance procedures, as well as the Student Code of Conduct. Students have the right to appeal course grades, (see Guidebook page 35), admissions committee decisions, or any adverse action taken by any online faculty against any student. The appeals process is the same for all types of appeals.

The student should attempt to resolve the problem directly with the involved faculty member. If the problem cannot be resolved between the student and the faculty member, the student next seeks assistance from the Department Head.

If no satisfactory solution is found, the student may consult with the Dean of the College, who will either assist the student or refer the student to the appropriate administrative person for further assistance.